BURNING WOOD SAFELY

A wood stove is not as easy to operate as a conventional gas or oil-fired heating system. One cannot set a thermostat and forget about it. Rather, it needs constant attention—stacking fuel, building fires, and maintaining the system.

Part of the attention required is proper installation in the first place and adequate maintenance after the stove is in use.

Unfortunately, stoves are frequently not installed with a high degree of care. The result of this inattention to detail could be a major housefire.

The U.S. Consumer Product Safety Commission has reported that wood heating systems are the number one cause of residential fires. In 1983, there were 44,000 chimney fires, causing 1,000 deaths and $180 million in property damage.

This is serious!!!

INSTALLING A WOOD STOVE

A wood stove must have enough space between it and any combustible material to prevent that material from igniting.

Wood ignites much easier when it is subjected to constant moderate heat.

A non-combustible covering for wood building components provides little real protection if it can directly conduct heat to the wood. The lumber would then slowly heat, possibly bursting into flame.

The flash point, or ignition temperature, of wood heated over a long period can be as low as 200° F—less than boiling temperature.

The National Fire Protection Association recommends a 36" space between a stove and any unprotected combustible material. Use of a circulating stove or sheet metal heat shields spaced out from the wall can reduce the amount of clearance required, but any less clearance should only be used with these specialized products. If you are planning to use less clearance, you should first check with your local fire department or building inspector, and your home insurance agent to make sure the installation meets their standards. The National Fire Protection Association has a set of generally followed guidelines.

There should also be adequate floor protection extending at least six inches from the sides and eighteen inches from the front of the stove.

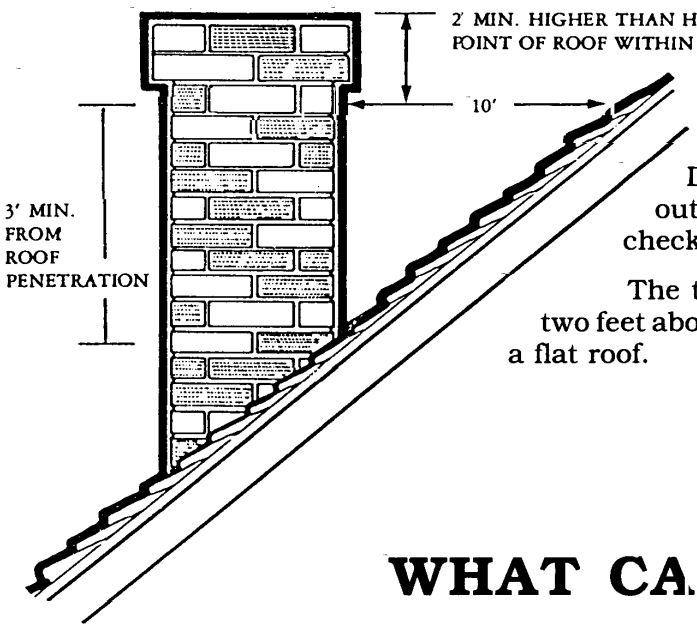
If you are planning to install a stove, you should exercise extreme care in using proper materials and adequate clearance.

CHIMNEYS

A wood burner should never be hooked up to a chimney which is also being used to vent an existing fuel oil or natural gas furnace.

Stovepipe should not be used as a chimney. It is just used in short runs to connect a stove to a proper chimney.

Avoid passing a stovepipe through a wall if at all possible. If a stovepipe must pass through a combustible wall, the pipe should go through an insulating collar called a thimble.



Prefabricated and insulated chimneys are preferable, and only chimneys tested by a national testing service (such as UL) should be used.

Do not use an old masonry chimney without a proper tile clay liner. Have it carefully checked if you're not sure as to its condition.

The top of a chimney should extend at least two feet above the peak of the roof or three feet above a flat roof.

WHAT CAUSES CREOSOTE?

Creosote builds up as a result of incomplete combustion within a wood stove. When the combustion is incomplete, highly combustible materials condense out of the exhaust gas and onto the chimney walls. This is creosote.

When wood burns completely, as is usually the case with air tight stoves and very hot fires, the exhaust is mainly carbon dioxide and water vapor. The less complete the combustion, the greater the creosote buildup.

Several factors can cause this incomplete combustion.

The use of "green" or undried wood is the most common. The stove uses its own heat to dry the wood before combustion can result. Much of the heat from the burning process is used up to first dry the wood, leaving a lower temperature fire which is more prone to cause creosote buildup.

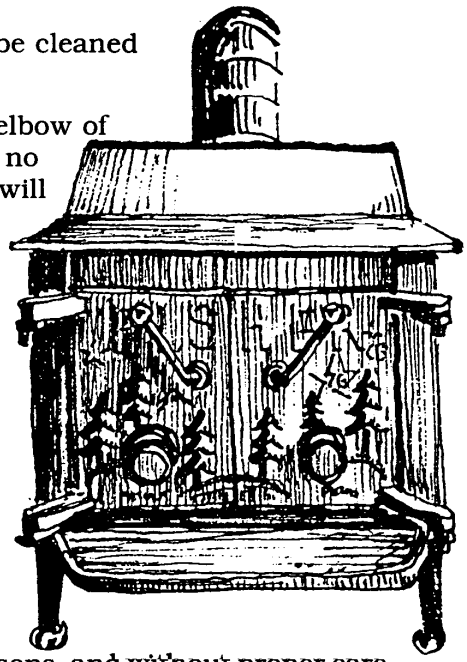
A low oxygen supply to the fire can also cause creosote problems. If oxygen is cut off from a fire, combustion will cease and the fire will die out. The high temperatures still present in the firebox, however, will continue to drive out unburned combustible gases.

A cold chimney will also aggravate creosote problems.

PREVENTING FIRES

A chimney fire is VERY DANGEROUS. It starts when the unburned creosote buildup previously mentioned ignites.

Chimney fires can burn at over 2000° F, melting or warping chimneys and causing major fires.



If a creosote buildup is ¼'' thick or more, it should be cleaned off as soon as possible.

Frequently, there is a "clean out" tee at the lowest elbow of the connecting pipe to aid in inspection and cleaning. If no such feature exists, parts of the stovepipe and chimney will have to be dismantled to allow full inspection.

Creosote will appear as a coating inside the pipe in a variety of textures from fur-like to flakes.

Creosote can form in any part of the chimney or stovepipe, so a careful and full inspection is required with special attention to all elbows.

Since this can be a very messy process with soot and dirt being stirred up, care should be taken to prevent household damage.

The creosote can be scraped off with a variety of specially manufactured brushes.

This can be a fairly difficult process for a variety of reasons, and without proper care, you can end up with soot all over your home. Fastening a large plastic bag to the lower openings of the chimney will help keep the soot contained.

Most chimneys must be cleaned from the roof. Great care should be exercised when climbing to and working on the roof.

The difficulty in containing chimney soot and the hazards of roof work are the main reasons many people hire professional chimney sweeps to clean their system.

Professionals will have the proper equipment on hand and should be knowledgeable in the proper safety techniques.

OTHER SAFETY CONSIDERATIONS

Should a chimney fire occur, shut off the air supply to the stove and call your fire department IMMEDIATELY.

Signs of a chimney fire include a roaring sound coming from the chimney, which may be much warmer than normal, and sparks being discharged from the top.

In a fire's early stages, a fire extinguisher discharged up the chimney may help to

control it or to put it out. Even if you feel you have controlled the fire, call the fire department. The chimney may already have been seriously damaged.

Many home fires are caused by human error occurring in a much simpler maintenance procedure—ash disposal. Live coals are likely to be present in the ashes, so they should NEVER be stored in a flammable container like a cardboard box.

Likewise, one should not carelessly place any oils, gases, or other volatile liquids near the stove where ignition may take place.

For all of these reasons, any home in which wood is burned should have smoke detectors installed in strategic locations and a fire extinguisher accessible to the stove area.

FOR MORE INFORMATION

More information is available from:

State Energy Conservation Program
Office of Intergovernmental Assistance
State Capitol Building, 14th Floor
Bismarck, North Dakota 58505
(701) 224-2094

or Call toll free in North Dakota, 1-800-247-1493.

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